

CLAIMS

1. Supporting module with waterproof seal for vehicle doors with a cable window lift mechanism, characterised in that it consists of a flexible laminar element (2) to separate the wet area from the dry area of the door (1) and seal the mounting accesses to the inside of the door, which bears during the mounting operations on the door (1) at least the window lift mechanisms and a support spacer (2.1) that allows a structural attachment of the door handle and the door (1) itself, so that when the aforementioned flexible laminar element (2) is positioned on the door (1) all the remaining components are placed in their mounting position, and once these elements are definitively attached to the door (1) the loads to which they are subjected during their use are transmitted only to the door (1) itself.
2. Supporting module with waterproof seal for vehicle doors according to claim 1, characterised in that the support spacer (2.1) is integrated in the flexible laminar element (2) forming a single body with it.
3. Supporting module with waterproof seal for vehicle doors according to claim 1, characterised in that it incorporates a loudspeaker (4).
4. Supporting module with waterproof seal for vehicle doors according to claim 1, characterised in that it incorporates the lock (3) and at least the transmission mechanisms for the locking, opening and closing actions.
5. Supporting module with waterproof seal for vehicle doors according to claim 1, characterised in that the flexible laminar element (2) incorporates the configuration of the base of an object-carrying pouch.
6. Supporting module with waterproof seal for vehicle doors according to claim 1, characterised in that the flexible laminar element (2) incorporates at least one element absorbing the energy of an impact.
7. Supporting module with waterproof seal for vehicle doors according to claim 1, characterised in that it includes the electrical cables for the window lift

motor.

5 8. Supporting module with waterproof seal for vehicle doors according to claim 7, characterised in that it incorporates the electrical accessories, such as courtesy lamps or indirect lighting.

10 9. Supporting module with waterproof seal for vehicle doors according to claim 1, characterised in that the flexible laminar element (2) provides an acoustical insulation function.

15 10. Supporting module with waterproof seal for vehicle doors according to claim 1, characterised in that the waterproof seal of the flexible laminar element (2) establishes a waterproof seal on the door (1) by means of a peripheral sealing gasket that adapts to the surface and outline of the space of the door (1).

20 11. Supporting module with waterproof seal for vehicle doors according to claim 10, characterised in that the peripheral sealing gasket is inserted in an also peripheral groove (2.3) of the flexible laminar element (2).

25 12. Supporting module with waterproof seal for vehicle doors according to claim 1, characterised in that the waterproof seal between the flexible laminar element (2) and the access openings for assembling the components is established by closures or lids (8).

30 13. Supporting module with waterproof seal for vehicle doors according to claim 12, characterised in that the closures or lids (8) sealing the assembly access openings are included in the flexible laminar element (2).

35 14. Supporting module with waterproof seal for vehicle doors according to claim 10, characterised in that the seal between the flexible laminar element (2) and the components and accessories that must cross from the wet to the dry area and vice versa is established by sealing gaskets.

 15. Supporting module with waterproof seal for vehicle doors according

to claim 14, characterised in that the sealing gaskets for the components and accessories that must cross from the wet to the dry area and vice versa are included in the flexible laminar element (2).

5 16. Supporting module with waterproof seal for vehicle doors according to claim 1, characterised in that the flexible laminar element (2) is attached by a bolted union (2.2) or by attachment clips integrated in the flexible laminar element (2).

10 17. Supporting module with waterproof seal for vehicle doors according to claim 1, characterised in that it is provided with attachment means for the cabling incorporated in the flexible laminar element (2) to form a single part with it.

15 18. Supporting module with waterproof seal for vehicle doors according to claim 1, characterised in that the window lift rails (6) have self-centering and attachment means on the upper ends (6.2) and lower ends (6.1).

20 19. Supporting module with waterproof seal for vehicle doors according to claim 18, characterised in that the attachment and centering means consist of a groove (1.3) on the fixed support or door (1) that is wider on one end of the groove (1.3) and narrower on the other end, with a converging transition to house a thickened widening (6.3), preferably a bolt, on the end of the rail (6).

25 20. Supporting module with waterproof seal for vehicle doors according to claim 18, characterised in that the centering and attachment means consist of a plateau (1.2) with oblique sides on the fixed support or door (1) on which rests the end (6.1) of the rail (6) according to a configuration that coincides in its shape and size with the aforementioned plateau (1.2) of the door, such that an
30 orifice (6.1.2) coincides with the orifice (1.2.1) of the plateau (1.2) for a bolted union.

21. Supporting module with waterproof seal for vehicle doors according to claim 18, characterised in that the centering and attachment means consist of
35 a plateau (1.4) on the fixed support or door (1) with an orifice (1.5) for a bolted

union and a groove (1.6) that is wider on one end than on the other, having a converging transition, and a tab (6.3) and an orifice (6.4) in the rail (6), such that the tab (6.3) of the rail (6) is made to coincide in the groove (1.6) of the door (1) until the orifices of the rail (6.4) and the door (6.5) coincide.

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22. Supporting module with waterproof seal for vehicle doors according to claim 18, characterised in that the centering and attachment means consist of a grooved housing (1.7.1) for guiding an attachment means (6.5), preferably a bolt, to a final position (1.7.2) of the grooved housing (1.7.1) where it is widened in order to maintain a stable position of the attachment means (6.5) for a subsequent tightening.

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23. Mounting procedure for the supporting module with seal for vehicle doors, characterised in that the assembly is performed by the following sequence of operations:

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- If a lock (3) is included, the flexible laminar element (2) is introduced from the side so that the lock (3) passes through the frame of the door (1), the flexible laminar element (2) being slightly displaced downwards to avoid interfering with the upper part of the window lift rail (6); if the flexible laminar element (2) is not provided with a lock the side entry is not necessary,

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- Rotation to insert the lock (3), if it is inserted in the flexible laminar element (2), in the sense displacing the upper part towards the housing of the lock (3) and simultaneously upwards to insert the upper part of both window lift rails (6),

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- Positioning of the centerers (9) for the flexible laminar element (2) and subsequent resting of the window lift rails (6) on the door (1),

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- Bolting or clipping of the flexible laminar element (2) with the central and peripheral attachments (2.2),

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- Bolting the window lift rails (6),

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- Bolting the lock (3),

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- Passage of the cable sheath if it is incorporated in the module into the wet area,

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- Placing the sealing lid on the cable sheath,

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- Placing and attaching the window with the aid of the cavities (2.4) of the flexible laminar element (2),

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- Placing the various waterproof sealing lids (8).